

## 3600W Hybrid Solar Inverter

# 3600W Hybrid Solar Inverter User Manual

Model: 3600W Hybrid Solar Inverter | Brand: Generic

## 1. INTRODUCTION

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This user manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of the 3600W Hybrid Solar Inverter. This advanced inverter is designed to efficiently convert DC 24V to pure sine wave AC 110V/120V, providing a robust 3600W rated and 7200W peak output. It is ideal for various applications including RVs, homes, off-grid cabins, and workshops, supporting up to 4200W solar input for both on-grid and off-grid solar setups. Please read this manual thoroughly before installation and operation to ensure safe and optimal performance of your inverter.

## 2. SAFETY INFORMATION

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Always observe the following safety precautions to reduce the risk of injury or damage to the inverter:

- Installation must be performed by qualified personnel in accordance with all local and national electrical codes.
- Do not attempt to disassemble or repair the inverter. Refer all servicing to qualified service personnel.
- Ensure proper grounding of the inverter.
- Do not expose the inverter to rain, snow, spray, or any liquids.
- Ensure adequate ventilation around the inverter to prevent overheating.
- Before connecting or disconnecting any wiring, ensure all power sources (solar, battery, AC grid) are disconnected.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.

## 3. PRODUCT OVERVIEW AND COMPONENTS

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The 3600W Hybrid Solar Inverter features a robust design with an intuitive interface for monitoring and control.



Figure 3.1: Front view of the 3600W Hybrid Solar Inverter, showing the main unit with the brand logo and the integrated LCD display panel.

### 3.1 Key Features

- **Pure Sine Wave Output:** Provides clean and stable power suitable for sensitive electronics.
- **Integrated MPPT Controller:** High-efficiency 120A MPPT solar charging controller maximizes solar energy harvesting.
- **Smart LCD Screen:** Real-time monitoring of power input/output, battery status, and system alerts.
- **Flexible Charging & Output Modes:** Four charging modes and three output modes for versatile power management.
- **Battery Compatibility:** Supports AGM, GEL, Lead-acid, Li-ion, and LiFePO4 24V batteries, including no-battery operation.
- **Rugged Design:** IP65-rated enclosure for durability in harsh environments.
- **Comprehensive Protection:** Built-in protections against overvoltage, undervoltage, reverse polarity, short circuits, overload, overheating, and overcurrent.

# FEATURES



NO.1

Pure sine wave solar inverter(on/off Grid)



NO.2

Smart battery charge design to optimize battery life



NO.3

Support WIFI&GPRS for IOS and Android

Figure 3.2: Illustration of the inverter's core features, highlighting its pure sine wave capability, optimized battery charging, and connectivity options.

## 3.2 Protection Mechanisms

The inverter incorporates multiple safety features to protect both the unit and connected devices, ensuring reliable and stable operation.

# All Round **Protection** for you and your devices

Multi-functional safety protection - More Reliable & Stable



Figure 3.3: Overview of the multi-functional safety protections integrated into the inverter, including safeguards against overload, short circuit, battery issues, overheating, overcurrent, and voltage fluctuations.

# MULTI SAFETY PROTECTION

All Round Protection for you  
and your devices

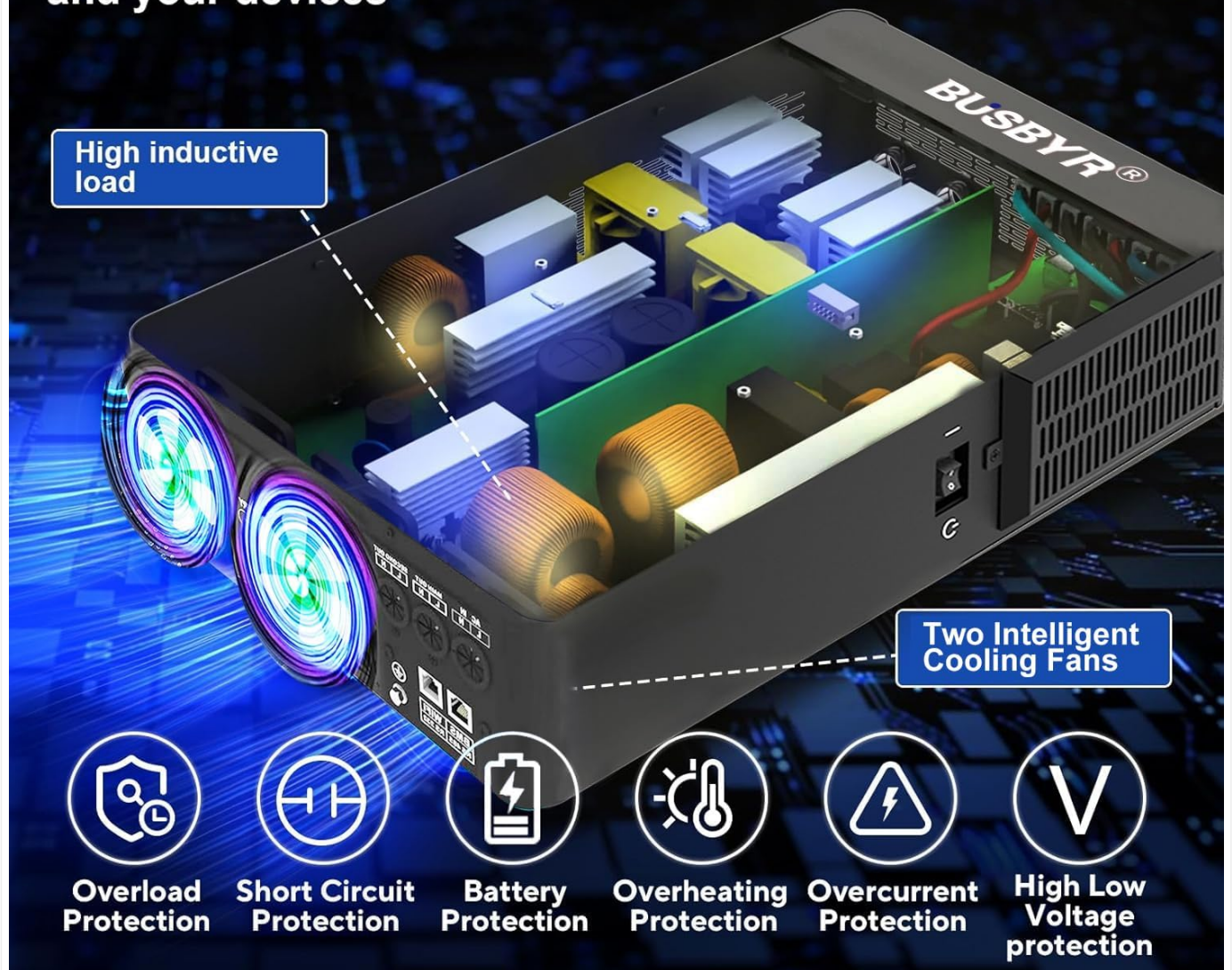


Figure 3.4: Internal components of the inverter, emphasizing the two intelligent cooling fans and various protection circuits including overload, short circuit, battery, overheating, overcurrent, and high/low voltage protection.

## 4. INSTALLATION AND SETUP

Proper installation is critical for the safe and efficient operation of your hybrid solar inverter. Ensure all safety guidelines are followed.

### 4.1 Site Selection

- Install the inverter in a well-ventilated area, away from direct sunlight, heat sources, and flammable materials.
- The IP65 rating allows for indoor or semi-outdoor use, but protection from direct weather exposure is recommended.
- Ensure the mounting surface is strong enough to support the inverter's weight (approximately 19.36 pounds).

### 4.2 Wiring Diagram and Connections

Refer to the following diagram for correct wiring connections. All connections must be secure and properly insulated.



Figure 4.1: Comprehensive wiring diagram illustrating the connections for the inverter, including municipal power/generator input, battery bank, solar PV array, and household loads. Key specifications like AC input voltage, battery type, and maximum PV array power are also shown.

### 4.3 Battery Connection

The inverter is compatible with 24V AGM, GEL, Lead-acid, Li-ion, and LiFePO4 batteries. It also supports operation without a battery for direct solar-to-load applications.

- Connect the battery bank to the designated battery terminals on the inverter, ensuring correct polarity.
- Use appropriate cable gauges for battery connections to minimize voltage drop and ensure safety.



Figure 4.2: The inverter mounted on a wall, demonstrating its ability to work with or without a battery, and highlighting compatibility with GEL, FLD (Flooded), LI (Lithium-ion), and USE (User-defined) 24V battery types.

## 5. OPERATING INSTRUCTIONS

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This section details how to operate your inverter, including understanding the LCD display and configuring settings.

### 5.1 LCD Display and Control Buttons

The inverter features a smart LCD screen for real-time monitoring and configuration. Use the intuitive control buttons to navigate menus and adjust settings.



Figure 5.1: The inverter's LCD display and control buttons, providing a user-friendly interface for monitoring system status and configuring operational parameters. An example of remote monitoring via an app (module sold separately) is also shown.

## 5.2 Charging Modes

The inverter offers four charging modes to optimize battery charging based on available power sources:

1. **Solar Only:** Charges batteries exclusively from solar power.
2. **AC Priority:** Prioritizes AC utility power for charging, using solar only when AC is unavailable.
3. **Solar Priority:** Prioritizes solar power for charging, using AC utility power only when solar is insufficient.
4. **Hybrid Charging:** Utilizes both solar and AC utility power for charging, balancing sources for optimal efficiency.

## 5.3 Output Modes

Three output modes allow for flexible power delivery to your loads:

1. **Mains Priority:** Prioritizes AC utility power to supply loads. The inverter switches to battery/solar power if AC utility is unavailable.
2. **PV Priority:** Prioritizes solar power to supply loads. The inverter switches to AC utility or battery power if solar is insufficient.
3. **Inverter Output:** The inverter continuously supplies power from the battery/solar, regardless of AC utility availability.

## 6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your inverter.

- **Cleaning:** Periodically clean the exterior of the inverter with a dry, soft cloth. Ensure ventilation openings are free from dust and debris. The IP65 dustproof design helps minimize internal dust accumulation.
- **Connections:** Annually check all electrical connections for tightness and signs of corrosion. Loose connections can lead to overheating and poor performance.

- **Ventilation:** Ensure the intelligent cooling fans are not obstructed and are operating correctly. The variable speed fan adjusts based on internal temperature.
- **Battery Health:** If using batteries, monitor their health and charge levels regularly. Follow battery manufacturer guidelines for maintenance.

## 7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter. For problems not listed here, contact customer support.

Problem	Possible Cause	Solution
Inverter not turning on.	No input power (battery, solar, AC grid) or main switch off.	Check all power connections. Ensure battery voltage is within operating range. Turn on the main power switch.
No AC output.	Overload, short circuit, or low battery voltage.	Reduce load. Check for short circuits in wiring. Recharge or replace battery. Check LCD for error codes.
Battery not charging.	Solar panels not connected, insufficient sunlight, or AC input issue.	Verify solar panel connections and ensure adequate sunlight. Check AC input connection if using AC charging. Verify charging mode settings.
Overheating warning.	Insufficient ventilation or excessive load.	Ensure clear airflow around the inverter. Reduce connected load. Check if cooling fans are operating.

For advanced troubleshooting or persistent issues, a one-click factory reset option is available. Consult the manufacturer's support for specific reset procedures if not detailed on the device.

## 8. SPECIFICATIONS

Detailed technical specifications for the 3600W Hybrid Solar Inverter.

Parameter	Value
Model	3600W Hybrid Solar Inverter
Rated Output Power	3600W
Peak AC Output	7200W
DC Input Voltage	24V DC
AC Output Voltage	110V/120V AC (Pure Sine Wave)
AC Input Voltage Range	100/110/120VAC
Frequency Range	50Hz/60Hz
Max Solar Input Power	4200W
MPPT Controller Current	120A
MPPT Voltage Range	60-500VDC

Parameter	Value
Max. Charging Current (PV+AC)	120A
Efficiency	98%
Product Dimensions	13.7 x 4.3 x 16.7 inches
Item Weight	19.36 pounds
Ingress Protection (IP) Rating	IP65 Dustproof
Battery Compatibility	AGM, GEL, Lead-acid, Li-ion, LiFePO4 24V

## 9. WARRANTY AND SUPPORT

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For warranty information, technical support, or service inquiries, please contact the manufacturer, Generic, or your authorized dealer. Keep your purchase receipt as proof of purchase for warranty claims.

Optional protection plans may be available for extended coverage. Refer to your point of purchase for details on these plans.

